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ATARI

Applying The Atari

by Jeff Brenner

This month's column brings the second part of *Recipe Manager* -- just in time to organize your holiday recipes. The second part adds two useful features to the section listed last month. The first is a "FIND" option, which lets you search for a particular recipe or category. The other is the "CALCULATE" option, which automatically halves, doubles, triples, etc. the measures for any recipe. This month we also have several utility programs submitted by readers, and more reader mail.

Clarifications/Corrections

I had the unusual opportunity to see last month's column in print before completing this month's article. I'll take advantage of this by correcting two confusing typographical errors that appeared here last month.

In November's column, a triangle symbol appears on page 180 and on page 184. In both these cases, this triangle should have been the less-than symbol. On both *Mailing List* and *Recipe Manager*, the greater-than symbol (same as INSERT key) moves forward among the entries, and the less-than symbol (same as the CLEAR key) moves backward. How did the triangles get there? I wish I knew.

On page 180, I seem to say that if you try to search for "Computer Shopper" the program cannot find "Computer Shopper." The first "Computer Shopper" should have been in all capital letters. If you try to search for something that is all capitals, the program will not find the same word that contains both capitals and lower case letters.

Also in November issue, I say that a keypad program correction was published in October. However, this program was left out of October's issue. November's keypad program is therefore the correction to the keypad program.

Reader Mail

Q. First I'd like to say thank you for an extremely good section for Atari home computers. I'm writing to ask you a few questions: (1) Is the Atari 400 totally compatible with 800 and 800XL software? (2) Is the Atari 400 compatible with the 810 disk drive? The 1050 disk

drive? (3) Where may I obtain DOS 2.5? (4) Can I piggy-back eight 2K chips on the back of each 2K memory chip in my Atari 400 to expand its memory to 32K? Can the same process be used to expand the memory to 48K or 64K? (6) Could you provide me with a listing for a memory test program? Your answers will be greatly appreciated by my users' group.

Kuniki Lockett
Sweetwater, AL

A. (1) The 400, provided it contains sufficient memory to run the programs, is completely compatible with 800 software. A 16K Atari 400, however, cannot run a 32K program for any machine. Software released specifically for the XL/XE machines cannot be used with the 400 and 800, but almost all Atari (8-bit) software will run on the 400/800 models.

(2) Again, provided the 400 contains at least 16K of memory, it can be used with the 810 or 1050 disk drives.

(3) As mentioned in last

month's column, you can send Atari your DOS 3 diskette and you will be sent DOS 2.5 at no charge (Atari Customer Relations, P.O. Box 61657, Sunnyvale, CA 94088).

(4) Unfortunately, expanding the 400's memory is not as simple as piggybacking RAM chips to the existing ones. You'll probably be better off buying an inexpensive Atari XL or XE than buying hard-to-find memory boards for the Atari 400.

(5) A memory test program is listed under "SIMPLE MEMORY TESTER." This BASIC program contains a machine language program that checks all memory above page 6 (location 1536). Each location is checked by setting all bits to zero (storing a zero in the location) and then setting all bits to one (storing a 255 in the location). At both points, the program verifies that the location contains the zero or the 255. If the memory location does not contain the value that was stored in it, the

program will end and will print the faulty memory address.

Q. I have played around

with the Atari 130XE and DOS 2.5. I tried to use the DOS in

Continued on page 66

SIMPLE MEMORY TESTER

```
VTJ 10 REM SIMPLE MEMORY TESTER
I1J 20 REM COPYRIGHT 1985 JB
ICJ 30 FOR I=1536 TO 1595:READ N:T=T+I+N
TKJ 40 POKE I,N:NEXT I
OQJ 50 IF T=10 THEN 70
WHJ 60 PRINT "ERROR-CHECK DATA LINES 100-170"
ROJ 70 PRINT CHR$(125); "CHECKING MEMORY..."
FSJ 80 POKE 207,0:A=USR(1536)
CKJ 90 IF PEEK(207) THEN 110
PSJ 100 PRINT "MEMORY O.K.":END
QXJ 110 BAD=PEEK(205)*256+PEEK(204)
YTJ 120 POKE BAD,PEEK(206)
OQJ 130 PRINT "BAD BYTE AT LOCATION ";BAD
PQJ 140 END
UXJ 150 DATA 104,169,168,141,1,210,169,7
UFJ 160 DATA 133,205,169,0,133,204,160,0
YQJ 170 DATA 177,204,133,206,169,0,145,204
CFJ 180 DATA 177,204,208,29,169,255,145,204
BWJ 190 DATA 177,204,201,255,208,19,165,206
CXJ 200 DATA 145,204,200,208,227,230,205,165
YCJ 210 DATA 205,141,0,210,197,106,208,216
UGZ 220 DATA 96,230,207,96
```

Program continued on next page

Atari Help

by Jeff Brenner

Q. When using my Atari 1200XL with a monitor, the image is very unclear. There is ghosting to the left of the characters. This double image makes it quite impossible to use comfortably. I have tried several different types of monitors, amber, green, color (an interesting note: with the color monitor, it looked like the convergence was badly off). In all cases, the monitors worked well on other computers (not Atari). Can you shed some light on this?

Robert Davis
Yorba Linda, CA

A. What is unusual about your problem is that you have tried other computers with your monitor and have been able to get a good picture. I assume you are using the proper cable (and of good quality) between the 1200XL's monitor jack and your monitor, that you have tried adjusting all controls on your monitor, and that you are not

using an 80-column board.

Have you tried using an ordinary color or black and white television set? See if you still get the double image.

Is the image unclear when you are using BASIC, or only when you are using a particular program, such as your word processor? If this only happens with a particular program, it is probable that the colors used for the text and the background do not blend smoothly and are causing this ghosting.

Although a hardware problem is least likely, you can see if this is the case by trying another Atari with your monitor. It does not have to be another 1200XL; a 600XL, 800XL or even an XE should give you the same result. If you get a clear picture with another Atari computer, this would indicate that your 1200XL does indeed have some type of hardware problem.

Q. I read your column (Applying The Atari) for the first time this week and would like

to compliment you on its content and style.

I couldn't resist an ad for an Atari word-processing set, comprising 800XL, 1027, 1050 and a monitor. Later, I bought an 850 interface from a member of the local SIG.

My problem centers around using the extraordinary 1027 printer. It seems to have been made to the same philosophy as the Model A Ford. I don't know if it will last as long.

There must be thousands of 1027s around the country. Do they all have such miserable documentation as I received with mine? The problem seems to be that all the textbooks on the Atari were printed before this printer was put on the market.

You would do me a huge service by telling me where I can find all there is to know about operating and looking after the 1027, particularly when connected to Atariwriter software.

How does it work? It spins so fast I haven't yet fathomed it! Where precisely does one

put the oil? Assuming one won't be able to buy spare ink cartridges forever, how does one revive them? Can one print special letters from Atariwriter without using the cumbersome Control-O sequence?

One of these days I want to try to use the 800XL as a robot controller, specifically to input analog voltages relative to its coordinates via the paddle ports, and output instructions through the RS232 interface. Has anything been published on this yet?

I do hope it's not imposing on you to ask all these questions. Even members of my SIG can't help — they are mainly interested in games or chatting on bulletin boards!

A. While books have been written on Atari computers, BASIC and even DOS, I don't know if there's any supplemental documentation available for Atari's printers. Occa-

Continued on page 163

4XFORTH For The Atari 520ST

by Clay Houston

As you may remember from my last article, I have been ordering most every high level language for the ATARI 520ST in an attempt to find one that I can learn fast and will work on the ST. I am anxious to produce some software products.

As of now I have the Atari Development Package of "C" and Assembler plus an editor and an overwhelming amount of supportive documentation you'd think would be quite good. To date, I have only been able to produce the "Cascade" program that was presented in the October '85 issue of *Antic* and that was agony because of the lack of linking explanations and the lesser quality diagnostics of the "C" compiler. I have not even been able to draw the simple house listed in the documentation. There's something missing on my understanding or in the system. Time will tell.

Now you see why I was so anxious to obtain a FORTH

compiler. Having used a very good quality FORTH on the Atari 800 for three years, I did not have to learn the basic about the language. I might also be expecting more from a first generation computer system that one should, so I tempered my expectations just a little. I ordered the 4XFORTH (four by Forth) from,

The Dragon Group
148 Poca Fork Road
Elkview, WV 25075
Phone (304) 965-5517

via VISA/Phone. I was very pleased with the delivery of the package. The young lady on the phone asked if they could delay the shipping for a couple of days so they could include a better quality binding for the documentation and I agreed. Then, right on schedule, it arrived. I must caution you that what arrived, as I was told when ordering, was an advanced version of "Level 1" which does NOT contain the GEM Interface. You can get

that package for \$100. It uses the "line A" graphics which are not real good. I was told that the full graphics package (which I ordered for \$155 total) would be sent when available and that would be in a month or two. After my 2 months of still-waiting for my order from one of the other software houses that was supposed to be mailed "next week," I am leary of any estimated delivery schedule when it comes to interfacing with the Atari/GEM graphics.

The package arrived with one (1) SERIALIZED disk and an attractive 5½ by 8½ notebook containing ten divided sections of about ¾ inches of double sided documentation.

The first page contained their copyright and limited (90 day) warranty and a cavate stating that the software is sold "AS IS" and the purchaser assumes the entire risk as to its quality and performance. It doesn't give you a nice warm feeling.

break the news, but an Atari spokesperson has told me that production of the 5200 game system and cartridges has been "put on hold indefinitely." Atari says it is now dedicating all of its effort to marketing its new computers.

Reader's Utilities

This month we are presenting three utilities submitted by readers. Each contributor has been sent a holograph sticker. If you have created a short program or have a public domain program that others may be interested in, send it in. The two best original programs received before the end of the year will earn their authors a program from Epyx or Sega.

Dave Garvin, of Medford, Oregon, writes: "I liked your program for the printers [ATASCII Lister, July 1985]. I am sending you a modified version that I made from your program. Program #1 is for the older Atari computers and Program #2 is for the XL/XE."

These programs are listed under the "PRINTER UTILITy" heading. 400/800 owners should enter the first listing, and XL/XE owners should enter the second. The program allows you to LPRINT or LIST "P" a program containing inverse video or graphics characters. Compared to ATASCII Lister, the inverse video and graphics characters

density when used with the 1050. When you say many users have abandoned the "dual density" format, I take it that you are referring to DOS 3. When Atari released DOS 3, it used the terms "double density" and "dual density." But, like DOS 2.5, DOS 3 does not actually work in double density - it also is an enhanced density DOS. Many Atari users stopped using DOS 3, not because of its density, but because of its incompatibility with DOS 2 and with some commercial software.

Q. Some of my friends and I have the Atari 5200 Super System and we would like to know if Jack Tramiel has plans to continue making the Super System and/or cartridges for the Super System.

Rudy Romero
Riverside, CA

A. I'm sorry to be the one to

moving box program and began experimenting with the screen control characters. I was disappointed in their selection of control characters. I always like to have some of the very prime commands to start with their first letter such as Control B for BOTTOM, not Control R. After a little search of the literature, I found out that we 520ers get to use the HOME key to get to the TOP. This seems inconsistent, but I will get use to it. It's like all software. One has to get use to the convention. I use to have problems with the Atari 400, 800, the Timex-Sinclair, the Ohio-Scientific, the VAX 11/780, the TI-990 and my four HP programmable calculators until I practiced.

Next comes a right good table of contents which also lists the FORTH words and location in the document followed by a section on what FORTH is, which ends up with a run-down of the multi-user capability of the 4XFORTH system.

Now into using the programming system. The files are,

FORTH.PRG
FRTH.DAT
FORTH.BLK

requiring a medium or high resolution display as is will not run adequately on a low resolution display. It gives a step by step start up procedure using the double-click on the .PRG and up comes the header, SERIAL number and the customary "ok." Right after that some techniques for saving 30bk of memory, a little sequence on setting and printing date and time and the BYE definition is presented.

Then it goes off on FILE control stuff which, after I learn to take the first step will, I'm sure, be useful. I tried to use the customary variable list calls but no success. I did find a word that replaces the DECOMPILED one I use to called LOCATE <word>. I really liked this one. It searched very fast and presented the screen that contained the word so one could see the coding associated with it.

There is a lot of information in that section including some pixel design worksheets, but I have to take one step first.

The Block Editor was next to explore. One of my computer buddies had just received his 4XFORTH and started right into it. He gave me a little moving box program which he had run on his 520ST and which I used for my first editing experience. Via the conventional INDEX word, I determined which 1024 byte block was empty and selected one. Then,

111 ED <cr>

and behold a screen No. 111 appeared. I typed the little

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Continued

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CLJ 2210 INPUT A$;L=LEN(A$)
VEJ 2220 GOSUB 1190;TRAP 2340;OPEN #2,4,0,FILE$ 
NJK 2230 CLOSE #5;OPEN #5,4,0,FILE$;INPUT #5;X,X,F,B;CLOSE #5
PRJ 2240 IF PEAK(764)>28 THEN PRINT CHR$(125);GOTO 1330
TAJ 2250 NOTE #2,8,8;INPUT #2,X,X;INPUT #2;LINE#;POSITION 2,2;PRINT LINE#
HZJ 2260 J=19;IF A=67 THEN IF A$=LINE$(1,L) THEN 2430
MJJ 2270 J=18;INPUT #2;LINE#;PRINT LINE#
VLJ 2280 IF A$=2 THEN IF A$=LINE$(1,L) THEN 2430
SYJ 2290 FOR I=1 TO J;INPUT #2;LINE#;NEXT I
FEJ 2300 GOTO 2240
UAJ 2310 POSITION 2,23,A=UBR(1664)
EWJ 2320 PRINT DE$(CHR$(195));"CONTINUE SEARCHING OR ";CHR$(211);"TOP?";I
FFJ 2330 GET #1,A;PRINT CHR$(A);I;IF A>67 THEN 1330
UEJ 2340 IF B=F0 AND B=FB THEN 2370
OKJ 2350 PRINT CHR$(125);I;LINE#;A$;GOSUB 1190;A$=LINE#;GOSUB 1190;GOTO 2240
RFJ 2360 IF PEAK(195)<>136 THEN 610
UNJ 2370 PRINT CHR$(125);I;GOSUB 1190
PIJ 2380 POKE 752,1;A$="END OF RECIPES";GOSUB 1260;POSITION 13,22;PRINT A$
KEJ 2390 A=UBR(1664)
LAJ 2400 POKE 764,255
RDJ 2410 IF PEAK(764)<>28 THEN 2410
FBJ 2420 GOTO 1330
AHJ 2430 FOR I=1 TO J;INPUT #2;LINE#;PRINT LINE#;NEXT I
JXZ 2440 I$=B;I$=B;NOTE #2,8,B;GOTO 2310

```

a double density drive and cannot find if it will support DD. None of the menu options seem to support DD. Why would Atari write a "new" DOS in this day that doesn't support DD? The documentation only says that it supports "dual density" and most users have abandoned this format long ago.

Sears V. Tanner
Leesville, LA

A. The Atari 1050 is more like a "one-and-a-half" density drive than a double density drive. Several companies sell modifications that can give you "true double density." Normally, however, the 1050 can not operate beyond what Atari now calls "enhanced density." Dos 2.5 can detect whether an 810 or 1050 is being used and automatically adjusts to function in single or in enhanced density. Thus, all commands on DOS 2.5 support enhanced

Now the empty section on the GEM Interface. As I noted earlier, I've ordered this package which may arrive in a month or two. When I receive it, I'll provide a detail review, hopefully with some detailed graphic demonstration including software.

This section is followed by an extensive discussion on the system programming. This goes into details on the multi-user and multi-tasking capability. There are a lot of details on task swapping followed by several tables on system operation structure cells. There is described the support for including a RAM disk using the call SET.RAMDISK.

Next is a very interesting lit-

Applying The Atari Continued from page 160

directly from the computer to the printer without having to first LIST the programs to disk.

Richard Fleagle, of Fairbanks, Alaska, sends a renumbering utility (listed under the "RENUMBERING UTILITY" heading) and writes: "I am a subscriber to the Computer Shopper and I read the Atari section in each issue. I wonder what has happened to all of the old utility programs that were so plentiful so many years ago. I guess it was in January of 1981. I am enclosing a utility I have used for years. As with all of the renumbering utilities I have used, this one is no exception as it will not renumber lines referred to by variables.

"To load the utility, have the program you wish to renumber in computer memory and type EN."D:RENUMBER.LST." To run it, type G.32100.

"The program asks you for the file name you wish to have for the finished product. It may be a good idea to use the original program name with

the extender of ".LST" since the renumbered program is saved in a LIST format. Next question is the starting line number and what line number increment you want. Maybe you want to start at line 10 and have the next line 20, etc. Just answer 10,10 at that prompt.

"The program keeps you posted as to what is happening as it goes along and plays a bit of music. If there are lines that refer to variable names or lines that are not in the program being renumbered, the line number and a message [SR-Symbolic reference or NF-not found] will appear on the screen. Write these line numbers down since you will want to go back to them and enter the correct line numbers manually. When renumbering is complete, the screen will show how many lines were renumbered. Pressing RETURN will LIST the program to disk. Then type NEW and ENTER your new renumbered program. If there were error - reference lines, check these out and make corrections. When all is done, SAVE the file.

Aaron Todd of Los Angeles, CA, submits "EDITING

UTILITY." This program should be LISTed to diskette. Then it can be ENTERed and merged with your BASIC programs. Type GOTO 31000 to run it. You'll be asked to "INCREMENT BY HOW MANY LINES?" If your program is generally numbered by ten (i.e. 10, 20, 30, etc.) enter 10 for this prompt. Then, pressing START will list the next line(s) of your BASIC program. Pressing SELECT will list the previous line(s). To edit a line on the screen, press BREAK and use the control keys to re-enter. Then type CONT and press RETURN. When you are finished using this utility, press OPTION and it will erase itself from memory, leaving you with your BASIC program.

Thanks to all readers who have submitted programs.

Genealogy Programs And More Genealogy Programs.

Last month I mentioned two genealogy programs that readers had written in about in response to Darwin K. Garrison's request for a genealogical program for the Atari. This month Computer Shopper readers have discovered even more. Antic Publishing, which claims that its genealogy program, *The Family Tree*, is "the only genealogy program for the Atari" had better take note:

- 1) Ancestors for the 800/XL/XE. \$39.95 plus a formatted DOS 2 diskette from Velma Prochter (Box 2434, Harbor, OR 97415).
- 2) Branches and Twigs for the 400/600/800/XL/XE, (companion programs). \$55.00 from Sysco Software (3595 Cloverleaf Drive, Boulder, CO 80302).
- 3) Family History. \$59.95 plus \$2.00 shipping from Direct Lines Software (4816 Forrestal

St., Fair Oaks, CA 95628).

4) Genealogical Database Manager and Family Tree Organizer for the 800/XL/XE, (soon for 520ST). \$29.95 from Caledonia Enterprises (490A Abelia Street, Sumter, SC 29152-1403).

The following were listed last month:

- 5) The Family Tree. \$19.95 plus \$3.00 shipping from Antic Publishing (524 Second St., San Francisco, CA 94107)
- 6) Genealogical Program from A-BUG-BYTE users group. \$5.00 from A-BUG-BYTE (10790 W. National Road, Brookville, OH 45309).

Now we have enough genealogy programs to last us for, well, generations! Several readers found these programs described in genealogy publications; others contacted organizations such as the National Genealogical Society. My sincerest thanks to all readers and genealogists who wrote, including Jim Cox, (APO New York), Al Crespo (Bakersfield, California), Y. Feiner (Orange, New Jersey), Louis J. Goldman (Middlegburg Heights, Ohio), James M. Herzberg (Toledo, Ohio), John P. Kirkpatrick (Sumter, South Carolina), Leo H. Kordsmeier, Jr. (Little Rock, Arkansas), Dixie Sandy (Lafayette, Colorado), and Dan Sweda (Brookville, Ohio).

In October, a letter from Ken Rogers (Melrose, Massachusetts) was printed in which he asked where he could find the "Power Stick," a joystick that was made by a company called Amiga. My thanks to Patrick Campbell (Birmingham, Alabama) for writing to say that he recently purchased the Amiga "Power Stick" at a Birmingham Toys 'R Us store. I have seen the "Power Stick" in Toys 'R Us

stores in the New York area, and there is a good chance that other Toys 'R Us stores around the country are selling this joystick.

Recipe Manager, Part II

Use Program Perfect to type in the Part II of Recipe Manager listed under the "Recipe Manager Additions" heading. Then LIST these additions to diskette (i.e. LIST "D:TEMP"), load in the original Recipe Manager, and ENTER the additions (ENTER "D:TEMP") to merge them with the original program. You can then SAVE the complete program under one name (i.e. SAVE "D:RECIPE.BAS").

The additions add the routines necessary for the FIND and the CALCULATE options. A description of each of these options follows:

FIND Recipes/Categories

This option lets you find a particular recipe that you've stored in Recipe Manager. It also enables you to look through recipes in a specific category only, such as "main dishes."

When F is pressed for the "SELECT:" prompt, you are asked, "FIND CATEGORY OR RECIPE?" If you have the name of a particular recipe in mind, press R, and you'll be asked to enter the name of the recipe. When you type the name and press RETURN, the program will look through each recipe stored on the diskette until a match is found.

If you are not sure of the entire name of the recipe, you can enter only a part of the name and the program will find all receipt names that match that part. For example, if you only type "CHICKEN," Recipe Manager would find any entries beginning with "CHICKEN," such as "CHICKEN A LA KING" and "CHICKEN ACCIATORE."

When a match is found, the recipe is displayed on the screen and you are asked if you want to "CONTINUE SEARCHING OR STOP." Press C to continue finding recipe names that match the one you entered, or press S to return to the menu screen. From the menu screen, you can then print the recipe, or use the CALCULATE feature (discussed later.)

If you choose to find a category, rather than a particular recipe, type in the name of the category you want to look through. Again, you can only enter a part of the category if you are unsure of

```
EDITING UTILITY
BYJ 31000 REM SPECIAL EDIT PROGRAM/A. TODD
BYJ 31010 PRINT "TO ADVANCE, PRESS START"
BYJ 31020 PRINT "TO BACK UP, PRESS SELECT."
MCJ 31030 PRINT "PRESS BREAK FOR EDIT MODE."
MJJ 31040 PRINT "TYPE 'CONT' AND PRESS RETURN WHEN YOU HAVE FINISHED EDITING."
VUJ 31050 PRINT "WHEN THROUGH, PRESS OPTION TO ERASE"
PZJ 31060 PRINT "THIS PROGRAM."
HJJ 31070 PRINT "INCREMENT BY HOW MANY LINES?"; INPUT LIN
CHJ 31080 FOR LST=9 TO 31760 STEP LIN
UJJ 31090 IF LST>1 THEN LIST LST+1,LST+LIN
IJU 31100 IF PEEK(53279)=4 THEN GOTO 31140
RJJ 31110 IF PEEK(53279)=5 THEN LST=LST-LIN:GOTO 31090
IJU 31120 IF PEEK(53279)=3 THEN GOTO 31150
IJU 31130 GOTO 31160
JWJ 31140 NEXT LST:GOTO 31090
EWJ 31150 PRINT CHR$(125); POSITION 2,4
MEJ 31160 FOR Y=31000 TO 31170 STEP 1:PRINT Y;NEXT Y:PRINT "GR.B:POKE 842,12"
FBZ 31170 POSITION 2,B:POKE 842,13:END
```

```
RECIPE MANAGER ADDITIONS
MTJ 1730 PRINT CHR$(125);:GOSUB 1100
FLJ 1740 GOTO 2150
BBJ 1750 GOSUB 1100:TRAP 1330
UDJ 1760 POSITION 2,23:PRINT DE$;
MCJ 1770 POSITION 2,22:PRINT DE$;"CURRENT NUMBER OF SERVINGS";
EVJ 1780 INPUT CN;
UVJ 1790 POSITION 2,22:PRINT DE$;"NUMBER OF SERVINGS DESIRED";
BUJ 1800 INPUT SD
CQJ 1810 F=SD/CN
CNE 1820 FOR Y=4 TO 21:POSITION 2,Y:INPUT B4,A6
PAE 1825 IF LEN(A6)=0 THEN NEXT Y:GOTO 1300
GJN 1830 IF A6(1,1)<>" " THEN NEXT Y:GOTO 2000
BYJ 1840 A6=A6(2,LEN(A6))
DQJ 1850 FOR X=2 TO LEN(A6):IF A6(X,X)<>" " THEN NEXT X:GOTO 1860
SKJ 1860 A6=A6(1,X-1)
FJZ 1870 GOTO 1890
AGJ 1880 POSITION 2,Y:PRINT " ";:POSITION 2,23:GOTO 2130
IJU 1890 J=LEN(A6)+1:DN=1:NH=0
OQJ 1900 FOR I=LEN(A6) TO 1 STEP -1:IF A6(I,I)<>"/" THEN NEXT I:I=I-2:GOTO 1940
JWJ 1910 DN=VAL(A6(I+1,LEN(A6)))
JME 1920 FOR J=I-1 TO 1 STEP -1
DIE 1925 IF A6(J,J)="/" AND A6(J,J)<="-" THEN NEXT J:N=VAL(A6)
MEJ 1930 NH=VAL(A6(J+1,I-1))
VXJ 1940 NH=F:IF J>1 THEN NH=NH/DN
BQJ 1950 IF J<1 THEN NH=NM/DN
YBZ 1960 NM=F:LN=LEN(A6)
EPJ 1970 IF INT(W)=0 THEN A6="":FR=W:N=0:GOTO 1990
UJJ 1980 A6=STR$(INT(W)):FR=W-INT(W):NM=FR
UDJ 1990 R=FR*DH+1:NH=0
VBJ 2000 FOR D=2 TO 5:IF D=5 THEN D=8
WVJ 2010 FOR N=1 TO D
AVJ 2020 IF ABS(FR-(N/D))<R THEN R=ABS(FR-(N/D)):DH=D:NH=N
BQJ 2040 IF DH=NH THEN NH=0:N=0
NZJ 2050 IF W THEN A6=STR$(W):IF NH=0 THEN 2090
BQJ 2060 IF W THEN A6(LEN(A6)+1)=STR$(NH):A6(LEN(A6)+1)="/"
HJZ 2065 A6(LEN(A6)+1)=STR$(NH)
HJZ 2066 A6(LEN(A6)+1)=STR$(NH)
HJZ 2067 POSITION 3,Y:J=LEN(A6)-LN:BOUND 1,25,18,0
VJZ 2100 IF J>0 THEN FOR I=1 TO J:PRINT CHR$(255);:NEXT I
CVJ 2110 IF JK>0 THEN FOR I=J+2 TO 1:PRINT CHR$(254);:NEXT I
WVJ 2120 PRINT A6:IF N=0 THEN 2090
BQJ 2130 NEXT Y
FFJ 2140 POKE 752,6:POSITION 2,22
BYJ 2150 POKE 752,6:POSITION 2,22
YRJ 2160 PRINT DE$;"FIND ";CHR$(195);;"CATEGORY OR ";CHR$(210);;"RECIPE?";
PGJ 2170 GET A1,1:IF A1>82 AND A1>67 THEN 1330
BQJ 2180 PRINT CHR$(A);
BQJ 2190 IF A>67 THEN POSITION 2,22:PRINT DE$;"FIND WHAT CATEGORY?";
BQJ 2200 IF A>82 THEN POSITION 2,22:PRINT DE$;"FIND WHAT RECIPE NAME?";
```

```
RENUMBERING UTILITY
YPJ 32350 REM RENNUMBER PROGRAM/DICK FLEAGLE
GJW 32360 DIM B6(12):PRINT CHR$(29);:CHR$(29);:TB=256:I=1:Z=32350
EJJ 32370 NH=0:I=PEEK(139)+PEEK(139)*TB
HJJ 32380 Y=PEEK(134)+PEEK(135)*TB+8*(PEEK(IX+5)-128)+2
PKJ 32390 PRINT "ENTER FILENAME FOR PROGRAM: ":"PRINT "(NAME AND EXTENSION ONLY)"
IGJ 32400 INPUT BS:PRINT "START ", BY (INCREMENT): ":"INPUT FR,BY:PRINT CHR$(125)
OIJ 32410 B=PEEK(137)*TB:X=BS+FR
ADJ 32420 LN=PEEK(X):+PEEK(X+1)*TB:BOUND 0,LN,18,0:IF LN=2 THEN 32460
FEJ 32430 PL=PEEK(X):+PEEK(X+1)*TB:BOUND 0,LN,18,0:IF LN=2 THEN 32460
C=K*X+3
EVJ 32440 LL=PEEK(C):C=C+1:GOSUB 32500:IF LL>PL THEN C=X+LL:GOSUB 32440
VLJ 32450 X=Z+PL:H=M+B/Y:GOTO 32420
DEJ 32460 M=F:R=X:BOUND 1,8,8,0
MIJ 32470 LN=PEEK(X):+PEEK(X+1)*TB:BOUND 0,32768-LN,18,0:IF LN=2 THEN 32748
DJJ 32480 MH=INT(TB)/ML=M-H*TB:POKE X,ML:POKE X+1,MH
MDJ 32490 M=M+BY:X=Z+PEEK(X+2):GOTO 32470
LRJ 32500 TK=PEEK(C)
AJJ 32510 IF (TK>9 AND TK<14) OR TK=35 THEN C=C+1:GOSUB 32640:RETURN
GJ 32520 IF TK>36 THEN 32560
GUJ 32530 C=C+1:D=PEEK(C):IF D=23 OR D=24 THEN 32560
CJ 32540 IZ=14 THEN C=C+6
JLJ 32550 GOTO 32530
QJ 32560 C=C+1:GOSUB 32640:D=PEEK(C):IF D>20 AND D>22 THEN 32560
EJJ 32570 RETURN
NUJ 32580 IF TK>7 THEN RETURN
ONJ 32590 C=C+1:D=PEEK(C):IF D=27 THEN 32620
CFJ 32600 IF D=14 THEN C=C+6
JOJ 32610 GOTO 32590
OCJ 32620 C=C+1:IF C<(X+LL) THEN GOSUB 32640
EJJ 32630 RETURN
PHJ 32640 D=PEEK(C):IF D=28 OR D=22 THEN C=C+1:RETURN
OHJ 32650 IF D>14 THEN PRINT M1," SR. ":"C=C+1:RETURN
BQJ 32660 C=C+1:FOR J=8 TO 3:POKE Y+J,PEEK(C+J):NEXT J
AJJ 32670 IF WHLM THEN NW=B+RN+F:GOTO 32690
HTJ 32680 MX=X:RN=M
NLJ 32690 MN=PEEK(NX)+PEEK(NX+1)*TB:BOUND 1,MN,18,0
L2J 32700 IF MN>2 AND MN<M THEN RN=RN+BY:MX=MN+PEEK(NX+2):GOTO 32690
KQJ 32710 IF MN>M THEN PRINT M1," NF. ":";GOTO 32730
VBJ 32720 MN=RN:FOR J=8 TO 3:POKE C+J,PEEK(Y+J):NEXT J
BQJ 32730 C=C+6:RETURN
UJ 32740 PRINT :POKE 85,18:PRINT ">";(M-FR)/BY;" LINES"
GJ 32750 PRINT "LIST";CHR$(34);;"D";" ";B6:CHR$(34);";";FR;" ";I-N-BY
HZJ 32760 FOR K=1 TO 3:PRINT CHR$(128);:NEXT K:POKE 766,8:END
```

Continued on page 164

Atari Help
Continued from page 65

sionally, updates to documentation are released by Atari, so you may want to write and ask if more information is available for the 1027 (Atari Customer Relations, P.O. Box 61657, Sunnyvale, CA 94088).

How the 1027 works? Basically, an electric current spins a band of characters to the proper letter or number which is then "stamped" onto the ink ribbon, leaving an impression on the paper. Compared to a typewriter, the 1027 seems amazingly fast, but you may be surprised to hear that it is actually one of the slowest printers. Dot-matrix printers, while offering lower-quality type, can churn out characters six to eight times faster than letter quality printers. The slower, letter-quality printers have an advantage, of course, in that their print is indistinguishable from that of a typewriter.

Unless your manual specifically tells you to oil the 1027, do not oil it. Most of today's printers are designed to run without user-oiling, and by oiling it you may do more harm than good.

Cartridges are more difficult to "revive" than are ribbons, but it is possible. One common method for extending the life of a cartridge is to take a part of the ribbon, twist it so the back of the ribbon faces the front, (180 degrees), and then completely wind the ribbon to the end. Some cartridge users open up the cartridge, apply a solvent, and then wind everything back up again when dry, but others say there may be undesirable "side-effects" to this technique.

Regardless of your printer, the Control-O sequence is necessary to send special character codes to the printer.

A good article to read on controlling external devices with the Atari computers is "Control Your Environment with the Atari 400/800" by David Alan Hayes (BYTE Magazine, July 1983, p.428). It discusses using the joystick ports for input/output. While written for the Atari 400 and 800, most of what is discussed pertains to the XL and XE computers as well. Remember, however, that the XL and XE have only two joystick ports instead of four.

Q. Do you have any advice on a modem that would be compatible with Atari XE, Franklin, Commodore and T.I.? I would like to be one modem and use individual cables.

Stan Morris
Kula, HI

A. Your best bet is to buy any of the RS232C-compatible

modems and use the appropriate cables/interfaces for each computer. You'll need to buy an Atari 850 interface to use such as a modem with the Atari XE.

Q. Thanks for all the nice articles on ATARI along with the great utility programs. They are proving very helpful in my computing! I have a ton of questions for you: 1) I have some customized business software packages written in BASIC which I would like to use the numeric keypad for entries. Is there a particular technique to inserting your

keypad program as a subroutine? 2) I would like to compile this business software into machine language. Is there a program like MAC65 or some other which could do the job? Or should I use something like the ACTION language to speed up the process?

John Palhof
West Palm Beach, FL

A. Adding the keypad subroutine to a BASIC program is easily done. First, renumber the keypad program (with a renumbering utility or manually) so that the line numbers do not interfere with

the line numbers of your business program. Next, you must change the program into a subroutine. This is done by changing the END on line 50 to a RETURN. LIST"C:" (for cassette) or LIST"D:TEMP" (for diskette) the renumbered keypad program. LOAD in your business software and ENTER"C:" or ENTER"D:TEMP" the keypad program. By ENTERing the LISTed keypad program, it is merged with your business program in memory. Now, to activate the keypad, place a GOSUB to the keypad

routine at the beginning of your business program. For example, if you renumbered the keypad program to begin at line 20000, line 5 of your business program could read:

5 GOSUB 20000

After the keypad routine is initialized, control returns to your BASIC program and the numeric keypad responds to your input.

Regarding your question on

Continued on
page 166

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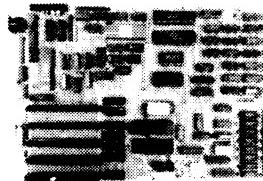
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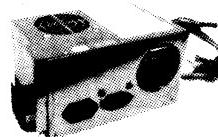
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**Applying The Atari
Continued from page 162**

the complete name. After a match is found, it is displayed on the screen and you are asked if you want to continue searching or to stop. Press C to find the next recipe in the category you specified. When you've found the recipe you want, press S and the menu will appear.

When finding either a recipe name or a category name, an "END OF RECIPES" message will be displayed when all recipes on the diskette have been examined for a match.

If you want to change a recipe that you have found, press S to stop searching and press B on the menu for the BROWSE/EDIT option. The last recipe that was found will be reprinted on the screen for you to change it as you please.

CALCULATE Feature

This option enables you to automatically multiply or divide the measurements of a particular recipe. Only the recipe that is on the screen is affected by this command -- the original recipe on the diskette will not be changed.

When C is pressed for the "SELECT:" prompt, you are asked, "CURRENT NUMBER OF SERVINGS?" Type the number of servings that the original recipe makes and press RETURN. It is a good idea to label the recipe itself with the number of servings. The best way to do this is by placing the number of servings in parenthesis at the leftmost position on a line, such as:

(4) SERVINGS.
This will enable the "4" to be changed along with the

measurements when a recipe is multiplied or divided.

Next you are asked, "NUMBER OF SERVINGS DESIRED?" Type the number of servings you would like to make and press RETURN.

Recipe Manager will then examine the recipe on the screen, line by line, multiplying or dividing each measurement as appropriate. Remember, in order for a measurement to be re-calculated, it must be in parenthesis and at the left-most position on the screen. An asterisk will be printed on any line that generates an error when the CALCULATE option is used. Such an error might result if a closed parenthesis is forgotten or if numbers are not in the correct format.

The CALCULATE feature will put mixed numbers in a form such as: 1 + 1/4. Recipe Manager uses 1/8 as the smallest fraction and will round measurements up or down to the nearest 1/8. If you would like the minimum measurement to be 1/4, change line 2000 to:

2000 FOR D = 2 TO 4

It is important to note that only the measurements will be changed -- baking times, for instance, must be lengthened or shortened by you, since these times cannot simply be multiplied or divided along with the measurements of the recipe.

Sample Recipe

Figure 1 shows a sample Recipe Manager screen on which a recipe (thanks to Sandra B.) has been placed. The first line of the mini-screen contains the category, "MAIN DISHES" and the second line contains the recipe name,

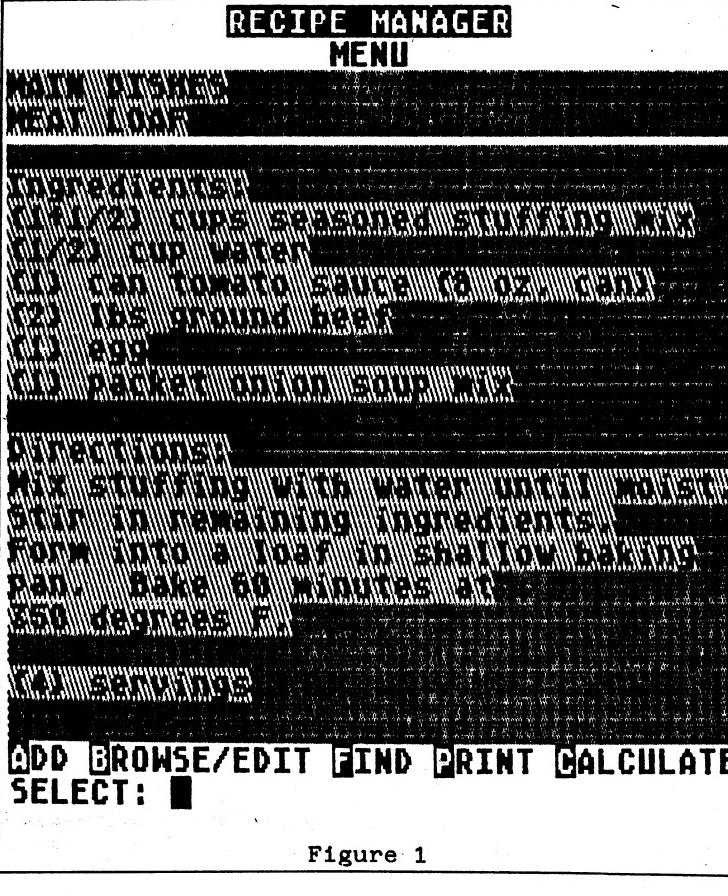


Figure 1

"MEAT LOAF." Note the format of the numbers for the measurements and the "(4) servings" near the bottom of the recipe.

Figure 2 shows how this recipe looks when printed with the PRINT option. The top recipe is the original one, while the bottom one was recalculated, with the CALCULATE option, for eight servings. Note how the categories are placed in the upper, left-hand corner and how the recipe names are automatically centered and underlined. This allows you to cut out the recipes and paste them on recipe cards, if desired.

**MAIN DISHES
MEAT LOAF**

Ingredients:
(1 + 1/2) cups seasoned stuffing mix
(1/2) cup water
(1) can tomato sauce (8 oz. can)
(2) lbs ground beef
(1) egg
(1) packet onion soup mix

Directions:

Mix stuffing with water until moist. Stir in remaining ingredients. Form into a loaf in shallow baking pan. Bake 60 minutes at 350° F.
(4) servings

**MAIN DISHES
MEAT LOAF**

Ingredients:
(3) cups seasoned stuffing mix
(1) cup water
(2) cans tomato sauce (8 oz. can)
(4) lbs ground beef
(2) eggs
(2) packet onion soup mix

Directions:

Mix stuffing with water until moist. Stir in remaining ingredients. Form into a loaf in shallow baking pan. Bake 60 minutes at 350° F.
(8) servings

Figure 2

Next Month

We'll have programs for the new year, reader mail, a look back to 1985, and more.

Readers' questions, comments and contributions are welcome. Please enclose a self-addressed, stamped envelope for a personal reply.

A diskette of all programs listed in this month's column is available from the author for \$7.00, postpaid. Please specify your disk drive model.

Program Perfect is a utility used to check for typing errors while entering programs from this column. Readers may send \$5.00 for a diskette of this program and documentation.

Address all correspondence to: Jeff Brenner, "Applying The Atari 12/85" c/o Computer Shopper, P.O. Box F, Titusville, FL 32781-9990.

Atari Help
Continued from page 163

compiling your BASIC business programs into machine language, you would want a BASIC compiler, such as Monarch Data System's ABC. A compiler will take a program written in BASIC and convert it into machine language code so that it may run several times faster. MAC/65 is only an

assembler/editor and would require you to completely rewrite your programs into assembly language; a far from simple task, regardless of your programming experience. A language such as Action! would speed things up, but again you would have to rewrite the entire program in the new language.

Q. On the *Mailing List* program ("Applying The Atari,"

June 1984) how do I change the left margin on my Okidata 92? As you know, the tractor is fixed so you can't shift the position of the paper.

*Mitchell J. Macieski
Nutley, NJ*

A. The lines listed under "Left-Hand Margin for *Mailing List*" will allow you to enter a value for the left

LEFT-HAND MARGIN FOR MAILING LIST

```
1155 PRINT "LEFT MARGIN": INPUT LM
1266 A$=SP$(1,LM)
1285 PRINT #5: SP$(1,.L+LM): ID2$: SP$(12): IF Q THEN PRINT #5: SP$(1,HS+5): ID$:
1290 PRINT #5: A$: NAME2$: IF Q THEN PRINT #5: SP$(1,HS): NAME$: NAME$=NULL$:
1300 PRINT #5: L$: A$: ADDR2$: IF Q THEN PRINT #5: SP$(1,HS): ADDR$: NAME2$: NAME$=NULL$:
1310 PRINT #5: L$: A$: CSZ2$: IF Q THEN PRINT #5: SP$(1,HS): CSZ$:
```

margin. This will work on any printer since it prints spaces to move the margin over. Lines 1155 and 1266 are added, while 1285, 1290, 1300 and 1310 are changed. Line 1285 is one of the new lines recently

added as an enhancement to *Mailing List*. If you did not enter the enhancements to *Mailing List*, then do not type this line.

When you choose to print labels, you'll now be asked to enter a left margin. Enter the number of spaces that you want the print head to move over before it begins printing.

4XFORTH
Continued from page 66

the section on Satellite Disk. This is a scheme in 4XFORTH where a "processor" may be run as a serial satellite from a computer which has disks." The information looks like one could develop a CRAY approach to multi-computer operation using this software. It's very intriguing.

A seventy page dictionary is next containing some four hundred words. The description of the words look good. There appears enough flexibility within this dictionary to do about anything one could wish to do in FORTH. Admittedly, it uses the "line A" for its minimum graphics but when the GEM Interface package arrives, the 4XFORTH system should prove an excellent tool for software development. The details of the description of each word was not always obvious, so I started dumping the source code. After 300 screens of information, I pulled the plug and began to study the detailed coding. This enhances the understanding of the explanation in the text. You can pick a word and follow it backwards up to the "primitive" using the LOCATE <word> tool. In studying the screens, I was quite pleased with the programmers comments in support of the coding.

There are two things that I wish were available. First, a programming card containing the word, format, and brief explanation classed into functioning areas. It takes time sorting through the pages of text. You know it's there but you just cannot find it. One time I turned off my cursor and could not find out how to turn it back on. Now that slows one down. The other thing for help would be some completed, detailed examples from booting, through editing, graphics, installation and running. I know the information is in there and I'll eventually find it even though I'm not the best at absorbing written material.

Even though there are some shortcomings and some breakdown that necessitate rebooting, I like the 4XFORTH system. I'm anxious to receive the GEM Interface package so I can get into some serious program development. I see bugs, lock-ups, etc., in the system that may be either 4XFORTH or the 520ST, but I feel that both Atari and the Dragon Group have enough class that when problems are isolated, we'll be furnished the fixes. Again, I like the system, but will hold my final judgement until I get a chance to work with the GEM Interface software.



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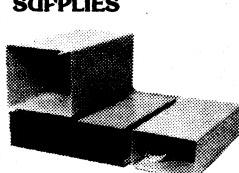
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